REMARKS

In the present Amendment, claim 1 has been amended to specify the components of the resin layer having photochromism characteristics. This amendment is supported by, for example, original claims 5 and 6.

Claim 1 has also been amended to recite that --said resin layer having photochromism characteristics and said resin layer having polarization characteristics being adhered to each other and interposed between said two polycarbonate resin layers--. This amendment is supported by the specification, for example, original claim 6, Fig. 1 and Examples.

Claims 1 and 2 have been amended to replace "transparent synthetic resin layers" and "contact" with --polycarbonate resin layers-- and --adhere to--, respectively. This amendment is supported by, for example, original claim 4 and Examples.

Claim 12 has been amended to replace "two liquid" with --cured--. This amendment is supported by, for example, original claim 6.

Claims 7, 8, 11, 12 and 14-16 have been amended to be dependent from claim 1.

Claims 18-21 have been added as new claims. These claims are supported by the specification at, for example, page 16, line 18 to page 17, line 7, and page 20, last line to page 21, last line.

No new matter has been added and thus, entry of the present Amendment is respectfully submitted to be proper. Upon entry of the Amendment, claims 1-3, 7-9 and 11-21 will be all the claims pending in the application.

In Paragraph No. 4 of the Office Action, claims 1-4 and 13 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bhalakia et al (U.S. Pat. No. 5,757,459) in view of Ichikawa et al.

Applicants respectfully submit that claims 1-3 and 13 as amended are not obvious over Bhalakia et al in view of Ichikawa et al. In the Amendment, Applicants have amended claim 1 to incorporate the subject matter of claims 5 and 6, which are not included in the rejection.

(1) Bahalakia et al (USP 5,757,459)

Bahalakia et al discloses a multi-focal lens with both a power portion and a functional portion wherein the power side has a front side and the functional portion has a rear side which is affixed to the front, side of the power portion (Abstract and col. 26. claim 1). The power portion imparts a majority of the optical power and magnification characteristics (Abstract and col. 26, claim 1). The functional portion 14 and the power portion 12 are attached together (col. 4, lines 49 to 50).

The functional member 20 is sandwiched between the first sheet 22 and the second sheet 24 (col. 4, lines 65 to 67).

The functional portion 14 may include a functional member 20 such as a functional coating or a functional member 21 (col. 4, lines 61 to 63). Bahalakia et al describes on col. 7, lines 12 to 13 that the functional member 20 preferably includes either the light polarizing property or the photochromic property. Likewise. Bahalakia et al describes on col. 13, lines 25 to 26 that the functional film 21 preferably incorporates either the light polarization property or the photochromic property.

That is. Bakalakia et al does not teach or suggest that the functional member 20 or 21 includes both the light polarizing property and the photochromic property. Applicants believe that this is based on the following reasons. Bahalakia et al describes on col. 10, lines 6 to 8 that the first, sheet 22 and the second sheet 24 should be compatible with the power portion 12, the functional member 20, the first and second adhesives 26, 28 and the first and second coatings 30, 32.

Bahalakia et al describes that the compatibility herein means strong adhesion of two materials and avoidance of degradation of a material due to undesirable reaction (col. 10, lines 9 to 20).

However. Bahalakia et al does not describe necessity of compatibility of functional member 20 (or 21) with a light polarizing property and the functional member 20 (or 21) with a photochromic property. Bahalakia et al describes that it is preferable to use either a member with a light polarizing property or a member with a photochromic property as functional member 20 (or 21).

Applicants believe that the problem in compatibility of the functional member 20 (or 21) with a light polarizing property and the functional member 20 (or 21) with a photochromic property is not solved in Bahalakia et al. When both the functional member 20 (or 21) with a light polarizing property and the functional member 20 (or 21) with a photochromic property are laminated together. compatibility of the polarizing member and the photochromic member is naturally required in the application of the laminate to an optical lens.

Bahalakia et al describes on col. 7, lines 12 to 22 that a base film of polyvinyl alcohol is especially preferred as the functional member 20 with the light polarizing property.

Further, Bahalakia et al describes on col. 7, lines 23 to 37 that examples of the functional member 20 with the photochromic property include homo and copolymers of various materials, and cellulose acetate butyrate is preferred. The homo and copolymers disclosed in Bahalakia et al are thermoplastic resins. That is. the functional member 20 with the photochromic property is a thermoplastic resin layer.

When both a photochromic resin layer and a polarization resin layer are applied to a multilayered laminate comprising outer layers to be used as an optical lens. The following performances are required.

(1) excellent photochromism characteristics in the photochromic resin layer after forming the multilayered laminate,

(2) good adhesion of the photochromic resin layer to an outer layer.

(3) good adhesion of the photochromic resin layer to the polarization resin layer.

(4) less degradation of initial polarization characteristic due to lamination, i.e., maintaining initial polarization characteristic prior to lamination in the polarization resin layer after forming the multilayered laminate, and

(5) good adhesion of the polarization resin layer to an outer layer.

The functional member 20 with the photochromic property in Bahalakia et al is a thermoplastic resin layer.

In contrast, the resin layer having photochromism characteristics of the present invention is a thermosetting resin layer comprising the cured polyurethane mixture.

Further. Bahalakia et al does not disclose or suggest a process for laminating together both a photochromic resin layer and a polarization resin layer. When both are laminated together. the above- mentioned performances of (1) to (5) are required in the application to an optical lens.

In the synthetic resin laminate of the present invention. it has been demonstrated in Examples I to 4 that excellent photochromism characteristics is exhibited and initial polarization characteristics of the polarization resin layer prior to lamination are maintained after producing the laminate.

The applicant submits herewith a Declaration Under 37 C.F.R. § 1.132 executed by Mr. Kenji Kouno, a co-inventor. The experimental data in the Declaration demonstrate that the resin layer having photochromism characteristics of the present invention has good adhesion to both the polycarbonate resin layer as an outer layer and the resin layer having polarization characteristics.

As demonstrated in the Declaration, the resin layer having photochromism characteristics has the same adhesive strength to the polycarbonate resin layer as to the resin layer having polarization characteristics.

It was alleged that it would have been obvious to make the multilayer functional film in Bahalakia et al out of both a photochromic: layer and a polarizing layer (page 2 of the Office Action).

However, (i) the photochromic layer of Bahalakia et al is a thermoplastic resin layer different from the thermosetting resin layer of the present invention; (ii) Bahalakia et al describes that application of either one of a photocromic layer or a polarizing layer is preferable; (iii) Bahalakia et al teaches no process for laminating both a photochromic layer and a polarizing layer; and (iv) when both a photochromic layer and a polarizing layer are laminated. the above-mentioned performances of (1) to (5) are required in the application to an optical lens.

In view of the above, the present invention is not obvious from Bahalakia et al.

(2) Ichikawa et al (USP 5,051,314)

As set forth in claim 1, the polycarbonate resin layer adhering to the resin layer having photochromism characteristics has a thickness of 50 μm or above and a retardation value of 150 nm or below, or 3000 nm or above.

Ichikawa et al does not teach or suggest the presently claimed range of retardation value and thickness of the polycarbonate resin layer.

As described at page 7, line 17 to page 8, line 5 of the present specification, when the thickness or retardation value of the polycarbonate falls outside the presently claimed ranges, the following problems occur,

(1) When the synthetic resin laminate is processed into curved surfaces, an interference figure is observed;

(2) The synthetic resin laminate does not possess satisfactory strength;

(3) A processed article with good appearance cannot be obtained;

(4) Polarization characteristics are deteriorated in an injection molding; and

(5) It is not practical since it is difficult to obtain a raw material.

Accordingly, the presently claimed invention is not obvious over Ichikawa et al.

In view of the above, the Examiner is respectfully requested to reconsider and withdraw the rejection.

In Paragraph No. 5 of the Office Action, claims 5-12 and 14-17 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bhalakia et al (459) in view of Mizuguchi et al (U.S. Pat. No. 5,603,757), a newly cited reference.

Applicants respectfully submit that claims 7-9, 11, 12 and 14-17 as amended are not obvious over Bhalakia et al in view of Mizuguchi et al.

Mizuguchi et al discloses a photochromic brightening pigment comprising a brightening pigment and a photochromic material which is encapsulated so as to adhere to the surface of the brightening pigment (Abstract and col. 12, claim 1). The brightening pigment is selected from known brightening pigments, such as, an aluminum flake pigment, nickel, mica, and etc. (col. 2. lines 3 to 7).

Further. Mizuguchi et al discloses a method of preparing a photochromic brightening pigment which comprises the steps of preparing a resin paste containing a photochromic material, mixing the resin paste with a brightening pigment and encapsulating the mixture (col. 1, lines 54 to 62). The encapsulated pigment thus obtained was mixed in a solvent(s) and other components, thereby preparing a coat paint and then the coat paint thus obtained is coated on a precoated base material such as a steel plate (col. 9, Examples 4 and 5).

Thus, the encapsulated pigment contains a brightening pigment such as aluminum flake pigment, nickel. mica, etc., as an indispensable component.

In contrast, in the resin layer having photochromism characteristics of the present invention, such brightening pigment is not any indispensable component. The photochromic pigment of the present invention corresponds to the photochromic material of Mizuguchi et al.

Further, the coat paint of Mizuguchi et al is coated on a precoated base material such as a steel plate which is not transparent. Mizuguchi et al neither disclose, nor suggest to apply the coat paint to an optical lens. Mizuguchi et al discloses the formation of a capsule wall of a polyurethane polymer through polyaddition reaction between polyisocyanate and polyol (col. 2, lines 49 to 52 and col. 14, claims 9 to 11). However, in Mizuguchi et al, the polyurethane polymer as a capsule wall and the paste comprising the photochromic material in the capsule do not form a uniform mixture. That is, the polyurethane polymer as a capsule wall and the paste comprising the photochromic material as a core material form a two-layer structure.

In contrast, the resin layer having photochromism characteristics in the present invention is a uniform mixture comprising a cured polyurethane mixture of a polyurethane prepolymer. curing agent and at least one photochromic pigment.

Further, Mizuguchi et al does not disclose or suggest the use of any curing agent in the polyaddition for formation of the polyurethane prepolymer.

Thus, Mizuguchi et al does not teach or suggest any multilayered synthetic resin laminate structure, such as, the synthetic resin laminate of the present invention.

In view of the above, the Examiner is respectfully requested to reconsider and withdraw the rejection.

In Paragraph No. 6 of the Office Action, claim 13 has been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bhalakia et al in view of Sugio et al (U.S. Pat. No. 4,992,218), a newly cited reference.

Applicants respectfully submit that claim 13 is not obvious over Bhalakia et al in view of Sugio et al, because Sugio et al does not rectify the deficiencies of Bhalakia et al.

Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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